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Feed the Future Support for Pest Management Pays Off for Papaya Farmers in Asia

A new impact assessment on a Feed the Future research project shows benefits of over $104 million in controlling the papaya mealybug, a major economic pest, from destroying papaya crops in India.

USAID's investment in the Feed the Future Food Security Innovation Laboratory: Collaborative Research on Integrated Pest Management (commonly referred to as IPM) has paid for itself through a single biological pest intervention, which is also reaping benefits that are saving the papaya industry and spurring private sector growth in South Asia.

The Feed the Future IPM Innovation Laboratory was established in 1993 as the Integrated Pest Management Collaborative Research Support Program and is a consortium of U.S. land-grant universities and national partners like USDA's Animal and Plant Health Inspection Service, funded by USAID. The Laboratory raises the standard of living of people in developing countries, including Feed the Future focus countries and strategic partner countries like India, by working with them to develop the best solutions to the agricultural challenges they face.

The mealybug, which is found throughout the world in warm, moist climates and feeds on over 60 species of plants, has devastated the papaya industry in India and Indonesia. Papaya is a nutritious and important commercial crop that is used to produce papain, a key ingredient in the production of chewing gum, shampoo, toothpaste, and meat tenderizer. It is also used in brewing and textile industries.

To address this problem, scientists from the Feed the Future IPM Innovation Laboratory introduced a parasitic wasp into the mealybug's habitat. The wasp lays its eggs inside the larvae of the mealybug, and when the eggs hatch, the wasps eat the papaya mealybug larvae, killing it before it can damage the fruit.

By collaborating with USDA's Animal and Plant Health Inspection Service, the Feed the Future IPM Innovation Laboratory was able to help India and Indonesia acquire and release these wasps and save the papaya industry. In the areas where they were released, these wasps have controlled nearly 100 percent of papaya mealybug. This effort has been so successful that the rearing of these wasps has now been taken over by the private sector in South Asia.